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A FOSSIL SPECIMEN OF THE ALLIGATOR SNAPPER  
(MACROCHELYS TEMMINCKII) FROM TEXAS.

(PLATES XVIII AND XIX.)

BY OLIVER P. HAY.

(Received May 23, 1911.)

The writer has received for examination from Professor Mark Francis, of the Texas Agricultural Experiment Station, at College Station, Tex., a nearly complete skull of the great fresh-water tortoise known as the alligator snapper. This fine specimen was discovered last summer or autumn during some dredging operations in the Brazos River, between College Station and Navasota. After passing through various hands it came into the possession of Professor Francis, who, on application, kindly transmitted it to me. With the skull came also a part of a carapace, which doubtless belonged to the same animal. The skull was found in a mass of gravel, and had undoubtedly been washed out of the river bank not far away. This proximity of the place of burial is evident from the little damage done to the skull, and is made more probable from the presence of a part of the shell.

The cavities of the skull, when it came into Professor Francis' hands, were full of gravel, wedged in very tightly. Some of this gravel was sent with the skull. It was strongly colored with iron oxide; and this oxide served to cement the bits of gravel together and to the bone. The bone is also colored with the oxide, and it is so thoroughly mineralized that, on being struck, it rings like a piece of porcelain.

It would be interesting to know exactly the geological age of this specimen; but it appears now impossible to determine this. Professor Alexander Deussen, of the University of Texas, has been engaged in studying the Quaternary and Recent deposits of some of the rivers of Texas; and a part of his results is soon to be published by the United States Geological Survey. He has kindly in-

formed the present writer that there occur along the Brazos River three principal terraces. The oldest and highest of these, the Hidalgo Falls terrace, lies at a height of 100 or more feet above the present water line of the river. In the materials of this terrace have been found remains of *Mammut*, *Elephas*, *Megalonyx*, *Equus*, etc. About 75 feet below this terrace is found another, the Port Hudson, whose thickness is from 20 to 30 feet. The upper terrace is regarded as older Pleistocene; the Port Hudson, as newer Pleistocene. At a level some 15 to 20 feet below that of the Port Hudson, is a terrace which Professor Deussen considers as of early Recent time. It constitutes the real "bottom lands" of the Brazos and is subject to overflow.

It is very probable that the remains described here were derived from the lowest and youngest terrace and that the individual lived at some time about the beginning of the Recent epoch. The species probably lives today in the Brazos River.

The skull (plates XVIII and XIX) lacks the lower jaw, a part of the temporal roof of the left side, most of the occipital condyle, and the hinder part of the supraoccipital process. A close examination reveals no characters by which it can be distinguished specifically from the alligator snapper. The profile (Pl. XIX, Fig. 2) is much less concave than in most specimens of the species collected in the rivers of the Southern States; but there is in the United States National Museum a skull of considerable size, no. 3769, from Mississippi, which presents no greater concavity than does the Brazos River specimen. There are two other skulls, the one considerably larger than the skull from Mississippi, the other considerably smaller, both of which are much more concave than the specimen from Mississippi. Hence, the amount of concavity seems not to depend on youth or old age.

The skull of the fossil is, relative to the length, slightly both broader and higher than are two skulls with which it is compared, as is here shown:

Specimen.	Snout to condyle.	Width.	Height.
Brazos River skull.....	I	1.19	.84
No. 3769 U. S. N. M., from Mississippi.....	I	1.14	.78
No. 3444 U. S. N. M., from Red R., Ark.....	I	1.08	.74

It will be observed that the last two skulls differ from each other about as much as the second differs from the fossil.

The same three skulls furnish the following measurements.

Measurements.	Brazos R. skull.	No. 3769.	No. 3444.
Snout to occipital condyle.....	183±	170	177
Snout to hinder end of supraoccipital process..	262±	236	226
Least width pterygoid region.....	33	29	29.5
Outside to outside of quadrates.....	187	166	163
Distance between hinder ends of cutting edges of upper jaws.....	142	128	126
Width in front of ear cavity.....	218	195	191
Width of temporal arch where narrowest.....	77	71	68
Orbit to excavation of postorbital arch.....	87	82	80
Horizontal diameter of orbit.....	32	30	32
Distance between fronts of orbits.....	55	50	53

Fig. 1 of Plate XIX represents the fragment of the carapace that accompanied the skull. This is reduced to five twelfths the natural size. It consists of a part each of the third and fourth costal plates, and of a part each of the sixth and seventh peripherals. On these parts are present areas representing the outer and hinder angle of the third costal scute, a little of the third and the whole of the fourth supramarginal scutes, the whole of the eighth marginal scute

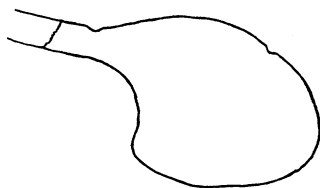


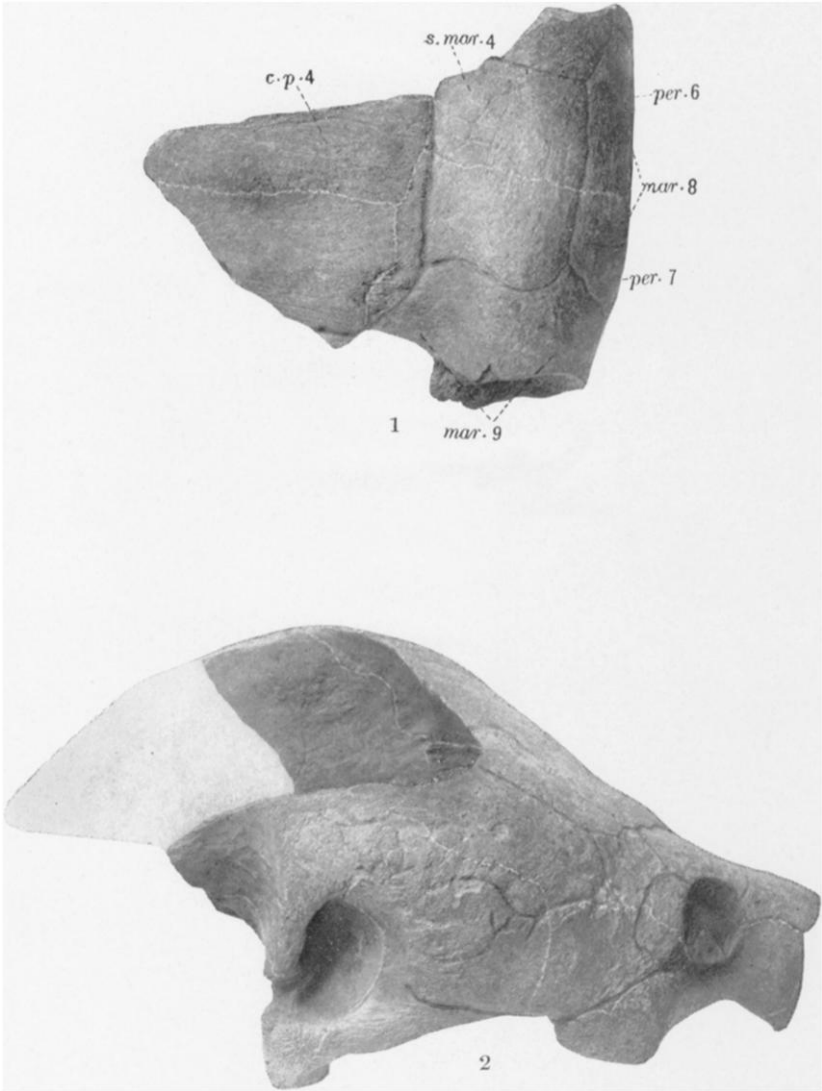
FIG. 1. Section of rim of carapace between sixth and seventh peripherals.

and a part each of the seventh and the ninth. These structures are almost identical with the corresponding ones of a mounted specimen of the species in the United States National Museum.

Fig. 1 represents a transverse section of the rim of the carapace taken between the sixth and the seventh peripherals.



**MACROCHELYS TEMMINCKII**  $\times \frac{1}{2}$



MACROCHELYS TEMMINCKII.  $\times \frac{1}{2}$

## EXPLANATION OF THE PLATES.

## MACROCHELYS TEMMINCKII, fossil.

In the figures of these plates the sutures between the bones are represented by narrow white lines; the seams between the horny scutes by wider dark lines. All the figures are two-fifths of the natural size.

## PLATE XVIII.

FIG. 1. Skull seen from above.

FIG. 2. Skull seen from below.

## PLATE XIX.

FIG. 1. Fragment of right side of carapace. *c. p. 4*, part of fourth costal plate, or bone; behind it is a part of the fifth. *mar. 8*, *mar. 9*, the eighth marginal horny scute and a part of the ninth. *per. 6*, *per. 7*, the sixth and seventh peripheral bones, but only a part of each. *s. mar. 4*, the fourth supramarginal horny scute; in front of it is a part of the third. The third costal horny scute area occupies the portions of the costal plates present, except the hinder border of the fifth.

FIG. 2. Skull seen from the right side.